Inspector: Calvin Ardies
Inspection Date: 01/12/10
Tank ID: D-380
IFR Seal Inspection

An inspection of the floating roof and seal was performed by HMT to satisfy the requirements of TCEQ Regulation V.

Visual inspection found the following:

1. Is the floating roof not resting on the surface of the liquid inside the tank and not resting on the leg supports? – No

2. Has liquid accumulated on the floating roof? – No

3. Is the seal detached? – No

4. Are there holes or tears in the seal fabric? – Not Visible

5. Are there visible gaps between the seal and the wall of the storage tank? If so, are the visible gaps exceeding the allowable gap area between the seal and the wall of the storage tank? – No

6. Is the bleeder vent closed ? Not Visible

Additional Comments/Summary of Inspection Findings:

Seal inspection narrative Tank D-380
On August 16 2006 this tank was taken out of service for an internal seal inspection. Oliver Alvarado and environmentalist Candace Vaughn inspected the seals. An IFR fittings checklist was completed.
Data:
Tank D-380 is a 37’-9” diameter by 51’ high tank. The tank has a Graver tank steel pan IFR. It is designed to be a one position IFR that operates at 6’. This roof is designed without roof leg supports. The roof is supported with knee braces from the shell and at the center column. The bleeder is set to have an 8” opening when resting on the knee braces. The roof displaces about 3- ¼”. The roof will start to float at 6’-3-1/2” of product. The bleeder vent will be fully closed at 7’-1-1/2” of product.
Inspection:
1. The secondary wiper seal is an HMT vapor Flex seal and has wear damage at the seal tip. The tip is not the solid elastomeric type. The seal tip is urethane covered with a 25-mill fabric. The fabric has tears that are caused by the pressure rubbing on the shell.
2. The primary is an HMT mechanical shoe seal. The fabric is in excellent condition.
3. It has one 24" leg activated bleeder vent and is also used as entry manway.
4. It has one 6" siphon drain that stays open all the time.
5. It has one 20" un-gasketed float well.
6. It has one built up fix roof column.
7. The primary shoe seal has six areas with gaps. Total is 51" of 1/8" to 1/4" gaps. Environmental will calculate.
8. The fixed roof is corrode in numerous areas and has holed through. This is allowing rainwater to collect on top of the IFR.
9. Ground cable is broken.

Repair scope is as follows:
1. Install new ground cable to the IFR. Ground cable connectors shall be the Burndy K-26 or equal.
2. Replace the fabric on the secondary seal using 25 mill Teflon coated fabric.
3. Remove the secondary seal to access the primary seal and repair the primary shoe seal gaps. Shell seal inspector shall inspect and approve repair before secondary seal is reinstalled.
4. Cover up the opening on the 6” siphon roof drain by installing seal fabric over the opening.
5. Remove old seals on the center column and replace with new.
6. Remove old seals on the gauge pole slide plate and replace with new.
7. Install seal on the bleeder vent.
8. Install seal on the float well cover.
9. Fix all fixed roof holes with Belzona and re-paint the fixed roof.

Summery:
The seal repair work completed and was inspected by Shell seal inspector Oliver Alvarado.

Please provide the following information for each tank that undergoes an internal inspection. When complete, please forward this data sheet to your ERO or the Air Permitting Specialist. If upgrades are made at that time, this data sheet should reflect the post-upgrade status of the tank. Where provided, please choose from the options on this data sheet.

1. Dimensions
a. Shell Height: 40 ft
b. Shell Diameter: 45 ft
c. Nominal Capacity or Tank Volume: gal
d. Self-Supporting Roof: no (If no, complete items e and f.)
e. Number of Columns: 1
f. Column Diameter: Built up

2. Shell/Roof and Paint Characteristics
a. Internal Shell Condition: Light Rust
b. Shell Color/Shade: White/White
c. Shell Paint Condition: Good
d. Roof Color/Shade: White/White
e. Roof Paint Condition: Good

3. Rim Seal System
a. Primary Seal: HMT Mechanical Shoe seal
b. Secondary Seal: HMT Vapor Flex

4. Deck Characteristics
a. Deck Type: Welded (If bolted, please complete item b.)
b. Deck Construction: continuous sheet construction 7 feet wide/continuous sheet construction 6 feet wide/continuous sheet construction 5 feet wide/panel construction 5x7.5 ft/panel construction 5x12 feet

Please complete the next section to provide information about the types of fittings on the floating roof. All fittings on the roof must be put on this data sheet. If a fitting on the actual roof does not fit into a category below, please choose the category that most closely resembles the actual fitting. If you have questions regarding the descriptions below, please consult your ERO or the Air Permitting Specialist. Drawings and/or more detailed information can be provided in most cases.

Fitting Type	Fitting Status	Quantity
Access Hatch (24-in. Diam.)	Bolted Cover, Gasketed	
Access Hatch (24-in. Diam.)	Unbolted Cover, Gasketed/ Combination bleeder vent	1
Automatic Gauge Float Well	Unbolted Cover, Gasketed	1
Column Well (24-in.Diam.)	Built-Up Col. -Sliding Cover, Gask.	1
Roof Leg (3-in. Diameter)	Fixed (do not penetrate roof deck)	3
Unslotted Guide-Pole Well	Gasketed Sliding Cover	1

Vacuum Breaker (24"/ combination manway) Weighted Mech. Actuation, Gask. 1

The blue represent one item used for two purposes.

Internal Floating Roof Tank Inspection Checklist

Tank Inspector __Oliver Alvarado Inspection Date_10/30/06 Tank ID_D-352

If the answer to any of the following five questions is "yes," contact the Environmental Representative to Operations (ERO) immediately!

1.1 Is the floating roof not resting on the surface of the liquid inside the tank and not resting on the leg supports? no
1.2 Has liquid accumulated on the floating roof? no
1.3 Is the seal detached? no
1.4 Are there holes or tears in the seal fabric? no
1.5 Are there visible gaps between the seal and the wall of the storage tank? no

The following questions will be used to certify compliance with all applicable regulations. Please answer "yes," "no," "not visible," or "not applicable." For an internal floating roof, the questions apply to the visible portion of the roof only. Please notify the ERO when an inspection has been completed. Provide comments as necessary for any unusual conditions found during the inspection.

If the answer to any of the following questions is "no," there is a potential deviation. Enter the potential deviation into the Deviation Reporting Database. If you have any questions, contact the ERO.

2.0 Seal
2.1 Is the IFR equipped with a seal (any type)? YES
[115.112(a)(1), 60.112(a)(1), 60.112a(a)(2)]

2.2 Is the IFR equipped with a liquid-mounted mechanical shoe seal, a liquid-mounted foam log seal, or two seals mounted one above the other where the lower seal may be vapor-mounted? If the IFR is equipped with a mechanical shoe or foam log lower seal, it may also be equipped with an upper wiper seal. YES
[60.112b(a)(1)(ii)(A), 60.112b(a)(1)(ii)(B), 60.112b(a)(1)(ii)(C), 61.351(a)(1), 63.119(b)(3)(i), 63.119(b)(3)(ii), 63.119(b)(3)(iii), 63.1063(a)(1)(i)(A), 63.1063(a)(1)(i)(B), 63.1063(a)(1)(i)(C)]

3.0 Access Hatch
3.1 Does the access hatch have a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use? [115.112(a)(2)(A)]

3.2 Does the access hatch have a projection below the liquid surface? YES
[60.112a(a)(2), 60.112b(a)(1)(iii), 61.351(a)(1), 63.119(b)(5)(i), 63.1063(a)(2)(i)]

3.3 Is the access hatch equipped with a cover or lid? YES
[60.112a(a)(2), 60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(a)(2)(ii)]

3.4 Is the cover or lid equipped with a gasket? YES
[60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(a)(2)(ii)]

3.5 Is the cover or lid maintained in a closed position at all times (i.e. no visible gap) except when the device is in actual use? YES
[60.112a(a)(2), 60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(b)(3)]

3.6 Is the cover or lid bolted? NO (Manway/Bleeder vent type can not be bolted)
[60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(6), 63.1063(a)(2)(vi)]

4.0 Automatic Gauge Float Well

4.1 Does the automatic gauge float well provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)]

4.2 Does the automatic gauge float well provide a projection below the liquid surface?
[60.112a(a)(2), 60.112b(a)(1)(iii), 61.351(a)(1), 63.119(b)(5)(i), 63.1063(a)(2)(i)] YES

4.3 Is the automatic gauge float well equipped cover or lid? YES
[60.112a(a)(2), 60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(a)(2)(ii)]

4.4 Is the cover or lid equipped with a gasket? YES
[60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(a)(2)(ii)]

4.5 Is the cover or lid maintained in a closed position at all times (i.e. no visible gap) except when the device is in actual use? YES
[60.112a(a)(2), 60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(b)(3)]

4.6 Is the cover or lid bolted? YES
[60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(6), 63.1063(a)(2)(vi)]

5.0 Column Well

5.1 Does the column well provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)]

5.2 Does the column well provide a projection below the liquid surface? YES
[60.112a(a)(2), 60.112b(a)(1)(iii), 61.351(a)(1), 63.119(b)(5)(i), 63.1063(a)(2)(i)]

5.3 Does the column well have a flexible fabric sleeve seal (a sock) or a sliding cover? [60.112a(a)(2), 60.112b(a)(1)(viii), 61.351(a)(1), 63.119(b)(5)(vii), 63.1063(a)(2)(ii), 63.1063(a)(2)(iv)] YES

5.4 Is the sliding cover equipped with a gasket? YES
[60.112b(a)(1)(viii), 61.351(a)(1), 63.119(b)(5)(vii), 63.1063(a)(2)(ii)]

5.5 Is the sliding cover maintained in a closed position at all times (i.e. no visible gap) except when the device is in actual use? YES
[60.112a(a)(2), 63.119(b)(6), 63.1063(b)(3)]

6.0 Gauge-Hatch

6.1 Does the gauge-hatch provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)] N/A

7.0 Ladder Well

7.1 Does the ladder well provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)] N/A

8.0 Rim Vent

8.1 The rim space vents should be set to open only when the IFR is not floating or at the manufacturer's recommended setting. At the time of the inspection were the rim space vents closed?
[115.112(a)(2)(C), 60.112a(a)(2), 60.112b(a)(1)(vi), 61.351(a)(1), 63.119(b)(6), 63.1063(b)(4)] N/A

9.0 Roof Drain

9.1 Does the roof drain provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?

[115.112(a)(2)(A) It has a 6” siphon type of drain. This drain normally stays open all the time. The drain has been covered with fabric and will no longer function.

9.2 Does the roof drain provide a projection below the liquid surface? NO
[60.112a(a)(2), 60.112b(a)(1)(iii), 61.351(a)(1), 63.119(b)(5)(i), 63.1063(a)(2)(i)]

9.3 Is the roof drain equipped with a cover or lid? NO
[60.112a(a)(2), 60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6)]

9.4 Is the cover or lid equipped with a gasket? NO
[60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6)]

9.5 Is the cover or lid maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use? NO
[60.112a(a)(2), 60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6)]

9.6 Is the roof drain equipped with a slit fabric seal? NO
[115.112(a)(2)(D)]

9.7 Does the slit fabric seal cover at least 90% of the area of the opening? If you can see liquid through this opening the answer is no. N/A
[115.112(a)(2)(D), 63.1063(a)(2)(v)]

10.0 Roof Leg
10.1 Does the roof leg provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)] roof legs do not penetrate the deck.

11.0 Sample Pipe or Well
11.1 Does the sample pipe or well provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)] N/A

12.0 Slotted Guide-Pole
12.1 Does the slotted guide-pole provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)] N/A

13.0 Stub Drain
13.1 Does the stub drain provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)] N/A

14.0 Unslotted Guide-Pole Well

14.1 Does the unslotted guide-pole well provide a projection below the liquid surface or is it equipped with a cover, seal, or lid that is in a closed position except when the device is in use?
[115.112(a)(2)(A)]

14.2 Does the unslotted guide-pole well provide a projection below the liquid surface?
[60.112a(a)(2), 60.112b(a)(1)(iii), 61.351(a)(1), 63.119(b)(5)(i), 63.1063(a)(2)(i)] YES

14.3 Is the unslotted guide-pole well equipped with a cover or lid? YES
[60.112a(a)(2), 60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(a)(2)(ii)]

14.4 Is the cover or lid equipped with a gasket? YES
[60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(a)(2)(ii)]

14.5 Is the cover or lid maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use? YES
[60.112a(a)(2), 60.112b(a)(1)(iv), 61.351(a)(1), 63.119(b)(5)(ii), 63.119(b)(6), 63.1063(b)(3)]

14.6 Is the unslotted guide-pole equipped with a pole wiper and a gasketed cap on the top of the guide-pole? YES
[63.1063(a)(2)(vii)]

14.7 Is the unslotted guidepole hatch closed (unless gauging the liquid level or taking samples)?
[63.1063(b)(5)] YES

15.0 Vacuum Breaker Vents (Automatic Bleeder Vents)

15.1 The vacuum breaker vents (automatic bleeder vents) should be closed at all times except when the roof is being floated off or is being landed on the roof leg supports. At the time of the inspection were the vacuum breaker vents closed?
[115.112(a)(2)(B), 60.112a(a)(2), 60.112b(a)(1)(v), 61.351(a)(1), 63.119(b)(4), 63.1063(b)(4)]

15.2 Are the vacuum breaker vents equipped with a gasket? YES
[60.112b(a)(1)(v), 61.351(a)(1), 63.119(b)(5)(iv), 63.1063(a)(2)(iii)]

David Lopez Shell Inspection